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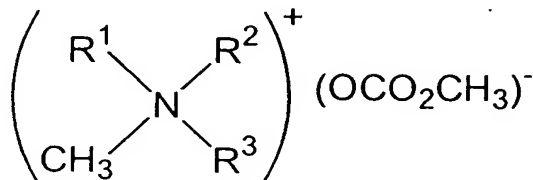
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IN THE CLAIMS:

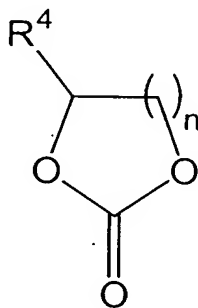
1. A method of preparing a quaternary ammonium methocarbonate having the formula



wherein R^1 and R^2 are independently C_1 - C_{30} alkyl and R^3 is a C_8 - C_{30} alkyl, the method comprising reacting

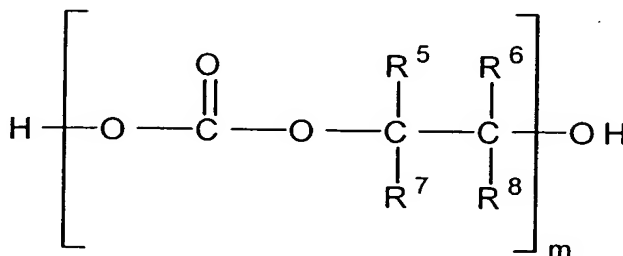
(a) an amine having the formula $NR^1R^2R^3$;

(b) (i) a cyclic carbonate having the formula



wherein R^4 is hydrogen or C_1 - C_4 alkyl and n is an integer from 1 to 10,

(ii) an aliphatic polyester having the formula



1 wherein R⁵, R⁶, R⁷, and R⁸ are independently hydrogen or C₁-C₁₀ alkyl and m is an integer
2 from 1 to 1200, or
3 (iii) a mixture thereof; and
4 (c) methanol
5 to form the methocarbonate.

1 2. The method of claim 1, wherein R¹ and R² are independently C₁-C₂₀ alkyl
2 and R³ is a C₈-C₂₀ alkyl.

1 3. The method of claim 1, wherein R¹ and R² are independently C₁-C₁₆ alkyl
2 and R³ is a C₈-C₁₆ alkyl.

1 4. The method of claim 3, wherein R¹ is methyl.

1 5. The method of claim 1, wherein R² is C₁-C₂₀ alkyl.

1 6. The method of claim 5, wherein R² is methyl.

1 7. The method of claim 5, wherein R² is C₈-C₁₂ alkyl.

1 8. The method of claim 7, wherein R² is C₁₀ alkyl.

1 9. The method of claim 1, wherein R³ is C₈-C₂₀ alkyl.

1 10. The method of claim 9, wherein R³ is C₈-C₁₂ alkyl.

1 11. The method of claim 10, wherein R³ is C₁₀ alkyl.

1 12. The method of claim 1, wherein R¹ is methyl and R² and R³ are
2 independently C₈-C₁₂ alkyl.

- 1 13. The method of claim 12, wherein R^2 and R^3 are C_{10} alkyl.
- 1 14. The method of claim 1, wherein R^1 and R^2 are methyl and R^3 is C_8-C_{20}
2 alkyl.
- 1 15. The method of claim 1, wherein the amine is selected from the group
2 consisting of didecylmethanamine, dodecylmethanamine, dioctylmethanamine,
3 octadecylmethanamine, dioctadecylmethanamine, trioctylamine, and any combination of
4 any of the foregoing.
- 1 16. The method of claim 1, wherein R^4 is hydrogen or methyl.
- 1 17. The method of claim 16, wherein the cyclic carbonate is ethylene carbonate.
- 1 18. The method of claim 16, wherein the cyclic carbonate is propylene
2 carbonate.
- 1 19. The method of claim 1, wherein R^5 , R^6 , R^7 , and R^8 are independently
2 hydrogen or C_1-C_4 alkyl.
- 1 20. The method of claim 19, wherein R^5 , R^6 , R^7 , and R^8 are independently
2 hydrogen or methyl.
- 1 21. The method of claim 1, wherein R^5 is methyl and R^6 , R^7 , and R^8 are
2 hydrogen.
- 1 22. The method of claim 1, wherein m ranges from 1 to 100.
- 1 23. The method of claim 1, wherein the molar ratio of amine to component (b)
2 ranges from about 1:1 to about 1:10.

1 24. The method of claim 23, wherein the molar ratio of amine to component (b)
2 ranges from about 1:2 to about 1:3.

1 25. The method of claim 1, wherein the molar ratio of amine to methanol
2 ranges from about 1:2 to about 1:20.

1 26. The method of claim 1, wherein the reaction step is performed at from
2 about 120 to about 160° C.

1 27. The method of claim 26, wherein the reaction step is performed at from
2 about 120 to about 150° C.

1 28. The method of claim 27, wherein the reaction step is performed at from
2 about 120 to about 140° C.

1 29. The method of claim 1, further comprising the step of recovering the
2 dimethyl carbonate.

1 30. The method of claim 1, wherein the reaction step comprises reacting
2 (a) the amine;
3 (b) (i) the cyclic carbonate,
4 (ii) the aliphatic polyester, or
5 (iii) a mixture thereof;
6 (c) methanol; and
7 (d) dimethylcarbonate.

1 31. The method of claim 30, wherein the molar ratio of amine to
2 dimethylcarbonate ranges from about 2:1 to about 1:3.

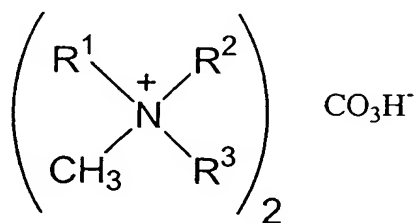
1 32. A method of preparing didecyldimethyl ammonium methocarbonate
2 comprising reacting

- 1 (a) didecylmethylanine;
- 2 (b) a cyclic carbonate selected from the group consisting of ethylene carbonate,
- 3 propylene carbonate, and mixtures thereof; and
- 4 (c) methanol
- 5 to form didecyltrimethyl ammonium methocarbonate.

- 1 33. The method of claim 32, wherein the reaction step comprises reacting
- 2 (a) didecylmethylanine;
- 3 (b) a cyclic carbonate selected from the group consisting of ethylene carbonate,
- 4 propylene carbonate, and mixtures thereof;
- 5 (c) methanol; and
- 6 (d) dimethylcarbonate.

- 1 34. The method of claim 32, wherein the cyclic carbonate is propylene
- 2 carbonate.

- 1 35. A method of preparing a quaternary ammonium bicarbonate having the
- 2 formula



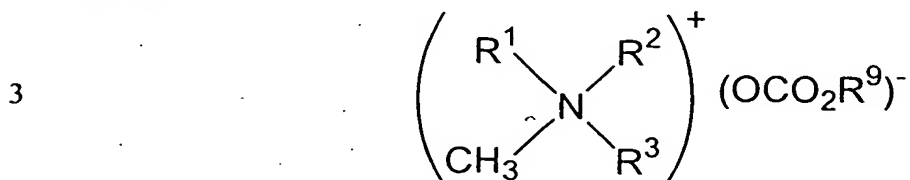
- 9 wherein R^1 , R^2 , and R^3 are independently C_1 - C_{30} alkyl, the method comprising
- 10 (a) preparing a quaternary ammonium methocarbonate by the method of claim
- 11 1; and
- 12 (b) converting the quaternary ammonium methocarbonate to the quaternary
- 13 ammonium bicarbonate.

1 36. A method of preparing didecyldimethyl ammonium bicarbonate comprising
2 (a) reacting
3 (i) didecylmethylamine,
4 (ii) a cyclic carbonate selected from the group consisting of ethylene
5 carbonate, propylene carbonate, and mixtures thereof, and
6 (iii) methanol
7 to form didecyldimethyl ammonium methocarbonate; and
8 (b) converting the didecyldimethyl ammonium methocarbonate to
9 didecyldimethyl ammonium bicarbonate.

1 37. The method of claim 36; wherein step (a) comprises reacting
2 (i) didecylmethylamine,
3 (ii) a cyclic carbonate selected from the group consisting of ethylene
4 carbonate, propylene carbonate, and mixtures thereof,
5 (iii) methanol, and
6 (iv) dimethylcarbonate
7 to form didecyldimethyl ammonium methocarbonate.

1 38. A method of preparing a mixture of quaternary ammonium bicarbonate and
2 quaternary ammonium carbonate wherein the quaternary ammonium cation has the
3 formula $N^+(CH_3)R^1R^2R^3$ and R^1 , R^2 , and R^3 are independently C_1 - C_{30} alkyl, the method
4 comprising
5 (a) preparing a quaternary ammonium methocarbonate by the method of claim
6 1; and
7 (b) converting the quaternary ammonium methocarbonate to a mixture of
8 quaternary ammonium bicarbonate and quaternary ammonium carbonate.

1 39. A method of preparing a quaternary ammonium alkylcarbonate having the
2 formula.



4 wherein R^1 and R^2 are independently C_1 - C_{30} alkyl, R^3 is a C_8 - C_{30} alkyl, and R^9 is a C_1 - C_{10}
5 alkyl, the method comprising reacting

6 (a) an amine having the formula $NR^1R^2R^3$;

7 (b) an ester having the formula



9 wherein R^{10} is a C_1 - C_{10} alkyl; and

10 (c) methanol

11 to form the quaternary ammonium alkylcarbonate.

1 40. The method of claim 39, wherein R^1 is methyl and R^2 and R^3 are
2 independently C_8 - C_{12} alkyl.

1 41. The method of claim 39, wherein the amine is selected from the group
2 consisting of didecylmethanamine, dodecylmethanamine, dioctylmethanamine,
3 octadecylmethanamine, dioctadecylmethanamine, trioctylamine, and any combination of
4 any of the foregoing.

1 42. The method of claim 39, wherein the molar ratio of amine to ester ranges
2 from about 1:1 to about 1:10.

1 43. The method of claim 42, wherein the molar ratio of amine to ester ranges
2 from about 1:2 to about 1:3.

1 44. The method of claim 39, wherein the molar ratio of amine to methanol
2 ranges from about 1:2 to about 1:20.

1 45. The method of claim 39, wherein the reaction step is performed at from
2 about 120 to about 160° C.

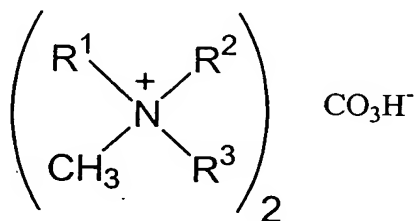
1 46. The method of claim 45, wherein the reaction step is performed at from
2 about 120 to about 150° C.

1 47. The method of claim 46, wherein the reaction step is performed at from
2 about 120 to about 140° C.

1 48. The method of claim 39, further comprising the step of recovering alkanol
2 having the formula R^9OH .

1 49. The method of claim 39, wherein the reaction step comprises reacting
2 (a) the amine;
3 (b) the ester;
4 (c) methanol; and
5 (d) alkyl methyl carbonate having the formula $CH_3OC(O)OR^9$.

1 50. A method of preparing a quaternary ammonium bicarbonate having the
2 formula



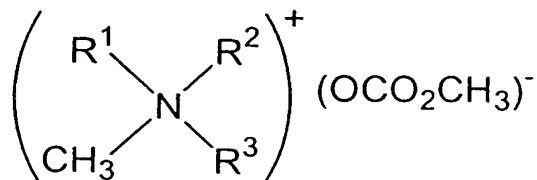
8 wherein R^1 , R^2 , and R^3 are independently C_1 - C_{30} alkyl, the method comprising

9 (a) preparing a quaternary ammonium alkylcarbonate by the method of claim

10 39; and

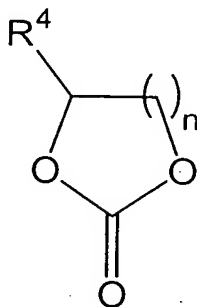
1 (b) converting the quaternary ammonium alkylcarbonate to the quaternary
2 ammonium bicarbonate.

1 51. A method of preparing a quaternary ammonium methocarbonate having the
2 formula



9 wherein R^1 and R^2 are independently C_1 - C_{30} alkyl and R^3 is a C_8 - C_{30} alkyl, the method
10 comprising reacting

- 11 (a) an amine having the formula $NR^1R^2R^3$;
12 (b) (i) a cyclic carbonate having the formula



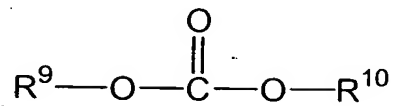
20 wherein R^4 is hydrogen or C_1 - C_4 alkyl and n is an integer from 1 to 10,

- 21 (ii) a polycarbonate,
22 (iii) a carbonate ester, or
23 (iv) a mixture thereof; and

24 (c) methanol

25 to form the methocarbonate.

1 52. The method of claim 51, wherein the carbonate ester has the formula



5 wherein R⁹ is -CH₃ and R¹⁰ is a C₁-C₁₀ alkyl.